



September 15, 2017

Mr. Anthony Krone  
Risk Manager  
Shelby County Schools  
160 South Hollywood – Room 152  
Memphis, Tennessee 38112

**RE: Lead in Drinking Water Sampling  
Westwood High School  
4480 Westmont  
Memphis, Tennessee  
Tioga Project No.: 24816.00**

Dear Mr. Krone,

At the request of Shelby County Schools (the Client), Tioga Environmental Consultants (Tioga) performed sampling of drinking water sources at the above referenced school for laboratory analysis of total lead concentrations. At the request of the Client, sampling was conducted on potable water sources in the kitchen and water fountains throughout the first floor of the school. Sampling was conducted early in the morning, before any potable water sources had been used for the day and prior to the arrival of any students or faculty.

On August 31, 2017, Tioga representative Felipe Vasquez arrived onsite and was escorted through the building by Shelby County Schools risk management personnel. First-draw potable water samples were collected in accordance with the Environmental Protection Agency (EPA) regulations codified in 40 CFR 141.86, and were documented and transferred under chain-of-custody protocol to Waypoint Analytical Laboratories in Memphis, Tennessee for analysis of total lead content.

**Results Based on Laboratory Analysis:**

Table 1 on the following page summarizes the sampling locations, laboratory analytical results, and EPA action level for lead in drinking water. Sample results with a “<” symbol did not contain lead content above the laboratory detection limit. Samples highlighted in yellow exceeded the EPA action level for lead.

**Down-to-earth partners. Sky's-the-limit solutions.**

**Table 1**  
**Summary of Analytical Results**  
**Westwood High School**  
**August 31, 2017**

| Sample ID | Sample Location                           | Total Lead (µg/L) | EPA Action Level (µg/L) |
|-----------|---|-------------------|-------------------------|
| 32-1      | Kitchen Sink - Left                       | 2.84              | 15                      |
| 32-2      | Water Fountain in Cafeteria - Left        | 4.91              |                         |
| 32-3      | Water Fountain left of Room 133           | 0.582             |                         |
| 32-4      | Water Fountain across from Room 111       | 1.39              |                         |
| 32-5      | Water Fountain across from Room 115 Left  | 20.3              |                         |
| 32-6      | Water Fountain across from Room 115 Right | 13.7              |                         |
| 32-7      | Water Fountain across from Room 116       | 1.87              |                         |

(µg/L) = Micrograms of lead per liter of water (parts per billion)

A review of the laboratory analytical results of the water samples collected revealed 1 sample with total lead concentrations above the EPA action level for drinking water. This sample was collected from the water fountain across from Room 115.

**Recommendations:**

Based upon the laboratory analytical results of the seven potable water samples collected from Westwood High School, Tioga recommends that the water fountain above the EPA action level be removed from service immediately. Due to the potential for lead solder and/or other lead-containing components in certain water fountain installations, Tioga recommends that all water fountains of similar style to the impacted water fountains also be removed from service pending further investigation. Due to elevated lead levels being discovered in water fountains at this site, Tioga recommends additional testing of all potable water sources at the site to determine all potential potable water sources with elevated lead levels.

**Limitations**

Potable water sources with elevated lead levels may potentially be present in areas of the property that are not addressed with this report. This investigation only included the potable water sources specifically addressed.

We appreciate the opportunity to provide you with this service. Should you have any questions regarding this report, please contact me at (901) 791-2432.

Sincerely,  
TIOGA ENVIRONMENTAL CONSULTANTS, INC.



Eric Davis, CIE  
Environmental Scientist

**Enclosure: (1) Laboratory Analytical Report**

9/7/2017

Tioga Environmental Consultants  
Mr. Luke Hall  
357 North Main Street  
Memphis, TN, 38103

Ref: Analytical Testing  
Lab Report Number: 17-243-0279  
Client Project Description: Site 32  
Project # 24816.00

Dear Mr. Luke Hall:  
Waypoint Analytical, Inc. received sample(s) on 8/31/2017 for the analyses presented in the following report.

The above referenced project has been analyzed per your instructions. The analyses were performed in accordance with the applicable analytical method.

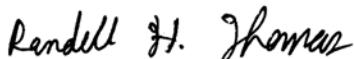
The analytical data has been validated using standard quality control measures performed as required by the analytical method. Quality Assurance, method validations, instrumentation maintenance and calibration for all parameters (NELAP and non-NELAP) were performed in accordance with guidelines established by the USEPA (including 40 CFR 136 Method Update Rule May 2012) and NELAC unless otherwise indicated. Any parameter for which the laboratory is not officially NELAP accredited is indicated by a '~' symbol. These are not included in the scope because NELAP accreditation is either not available or has not been applied for. Additional certifications may be held/are available for parameters, where NELAP accreditation is not required or applicable. A full list of certifications is available upon request.

Certain parameters (chlorine, pH, dissolved oxygen, sulfite...) are required to be analyzed within 15 minutes of sampling. Usually, but not always, any field parameter analyzed at the laboratory is outside of this holding time. Refer to sample analysis time for confirmation of holding time compliance.

The results are shown on the attached Report of Analysis(s). Results for solid matrices are reported on an as-received basis unless otherwise indicated. This report shall not be reproduced except in full and relates only to the samples included in this report.

Please do not hesitate to contact me or client services if you have any questions or need additional information.

Sincerely,



Randy Thomas  
Project Manager

*Laboratory's liability in any claim relating to analyses performed shall be limited to, at laboratory's option, repeating the analysis in question at laboratory's expense, or the refund of the charges paid for performance of said analysis.*

|                 |                    |                  |                        |                   |
|-----------------|--------------------|------------------|------------------------|-------------------|
| Alabama #40750  | Louisiana #04015   | VA NELAP #460181 | Texas #T104704180-11-6 | Arkansas #88-0650 |
| Mississippi     | California #2904   | NC #415          | Oklahoma #9311         | Virginia #00106   |
| Kentucky #90047 | Tennessee #TN02027 | EPA #TN00012     | Kentucky UST #41       |                   |





2790 Whitten Road, Memphis, TN 38133  
Main 901.213.2400 ° Fax 901.213.2440  
[www.waypointanalytical.com](http://www.waypointanalytical.com)

06510

Tioga Environmental Consultants  
Mr. Luke Hall  
357 North Main Street  
Memphis , TN 38103

Project Site 32  
Information : Project # 24816.00

Report Date : 9/7/2017

Report Number : **17-243-0279**

**REPORT OF ANALYSIS**

Received : 8/31/2017

Lab No : **89042**

Matrix: **Aqueous**

Sample ID : **32-1**

Sampled: **8/31/2017 6:12**

| Test       | Results     | Units | MQL   | DF | Date / Time Analyzed | By  | Analytical Method |
|------------|-------------|-------|-------|----|----------------------|-----|-------------------|
| Total Lead | <b>2.84</b> | µg/L  | 0.513 | 1  | 09/06/17 16:25       | BKN | EPA-200.8         |

Lab No : **89043**

Matrix: **Aqueous**

Sample ID : **32-2**

Sampled: **8/31/2017 6:14**

| Test       | Results     | Units | MQL   | DF | Date / Time Analyzed | By  | Analytical Method |
|------------|-------------|-------|-------|----|----------------------|-----|-------------------|
| Total Lead | <b>4.91</b> | µg/L  | 0.513 | 1  | 09/06/17 16:26       | BKN | EPA-200.8         |

Lab No : **89044**

Matrix: **Aqueous**

Sample ID : **32-3**

Sampled: **8/31/2017 6:16**

| Test       | Results      | Units | MQL   | DF | Date / Time Analyzed | By  | Analytical Method |
|------------|--------------|-------|-------|----|----------------------|-----|-------------------|
| Total Lead | <b>0.582</b> | µg/L  | 0.513 | 1  | 09/06/17 16:28       | BKN | EPA-200.8         |

Lab No : **89045**

Matrix: **Aqueous**

Sample ID : **32-4**

Sampled: **8/31/2017 6:18**

| Test       | Results     | Units | MQL   | DF | Date / Time Analyzed | By  | Analytical Method |
|------------|-------------|-------|-------|----|----------------------|-----|-------------------|
| Total Lead | <b>1.39</b> | µg/L  | 0.513 | 1  | 09/06/17 16:29       | BKN | EPA-200.8         |

Qualifiers/  
Definitions

DF

Dilution Factor

MQL

Method Quantitation Limit



2790 Whitten Road, Memphis, TN 38133  
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www.waypointanalytical.com

06510

Tioga Environmental Consultants  
Mr. Luke Hall  
357 North Main Street  
Memphis , TN 38103

Project Site 32  
Information : Project # 24816.00

Report Date : 9/7/2017

Report Number : **17-243-0279**

**REPORT OF ANALYSIS**

Received : 8/31/2017

Lab No : **89046**

Matrix: **Aqueous**

Sample ID : **32-5**

Sampled: **8/31/2017 6:19**

| Test       | Results     | Units | MQL   | DF | Date / Time Analyzed | By  | Analytical Method |
|------------|-------------|-------|-------|----|----------------------|-----|-------------------|
| Total Lead | <b>20.3</b> | µg/L  | 0.513 | 1  | 09/06/17 16:30       | BKN | EPA-200.8         |

Lab No : **89047**

Matrix: **Aqueous**

Sample ID : **32-6**

Sampled: **8/31/2017 6:20**

| Test       | Results     | Units | MQL   | DF | Date / Time Analyzed | By  | Analytical Method |
|------------|-------------|-------|-------|----|----------------------|-----|-------------------|
| Total Lead | <b>13.7</b> | µg/L  | 0.513 | 1  | 09/06/17 16:32       | BKN | EPA-200.8         |

Lab No : **89048**

Matrix: **Aqueous**

Sample ID : **32-7**

Sampled: **8/31/2017 6:22**

| Test       | Results     | Units | MQL   | DF | Date / Time Analyzed | By  | Analytical Method |
|------------|-------------|-------|-------|----|----------------------|-----|-------------------|
| Total Lead | <b>1.87</b> | µg/L  | 0.513 | 1  | 09/06/17 16:33       | BKN | EPA-200.8         |

Qualifiers/  
Definitions

DF

Dilution Factor

MQL

Method Quantitation Limit

### Cooler Receipt Form

Customer Number: **06510**

Customer Name: **Tioga Environmental Consultants**

Report Number: **17-243-0279**

#### Shipping Method

|                              |   |                               |  |
|------------------------------|---|-------------------------------|--|
| <input type="radio"/> Fed Ex | <input type="radio"/> US Postal         | <input type="radio"/> Lab     | <input type="radio"/> Other : <input type="text"/> |
| <input type="radio"/> UPS    | <input checked="" type="radio"/> Client | <input type="radio"/> Courier | Thermometer ID: <input type="text" value="N/A"/>   |

Shipping container/cooler uncompromised?  Yes  No

Number of coolers received

Custody seals intact on shipping container/cooler?  Yes  No  Not Required

Custody seals intact on sample bottles?  Yes  No  Not Required

Chain of Custody (COC) present?  Yes  No

COC agrees with sample label(s)?  Yes  No

COC properly completed  Yes  No

Samples in proper containers?  Yes  No

Sample containers intact?  Yes  No

Sufficient sample volume for indicated test(s)?  Yes  No

All samples received within holding time?  Yes  No

Cooler temperature in compliance?  Yes  No

Cooler/Samples arrived at the laboratory on ice.  
 Samples were considered acceptable as cooling process had begun.

Water - Sample containers properly preserved  Yes  No  N/A

Water - VOA vials free of headspace  Yes  No  N/A

Trip Blanks received with VOAs  Yes  No  N/A

Soil VOA method 5035 – compliance criteria met  Yes  No  N/A

High concentration container (48 hr)  Low concentration EnCore samplers (48 hr)

High concentration pre-weighed (methanol -14 d)  Low conc pre-weighed vials (Sod Bis -14 d)

Special precautions or instructions included?  Yes  No

Comments:



|                 |              |
|-----------------|--------------|
| Kit ID:         | 0000085412   |
| Initiated By:   | Andy Parrish |
| Initiated Date: | 8/28/2017    |
| Project Comment |              |

## CHAIN-OF-CUSTODY

| Company Name                    |      | Company Number                                | Client Project Manager/Contact  |            |           |                | Purchase Order Number   |               |
|---------------------------------|------|---|---|------------|-----------|----------------|---|---------------|
| Tioga Environmental Consultants |      | 06510   | Mr. Luke Hall   |            |           |                |   |               |
| Site Name<br><br>32             |      | Project Number<br><br>24816.00                | <input type="checkbox"/> RUSH – Additional charges apply<br><input type="checkbox"/> Special Detection Limits(s)<br>Date Results Needed |            |           |                | <b>Method of Shipment</b><br><input type="checkbox"/> Fed Ex <input type="checkbox"/> UPS <input type="checkbox"/> USPS<br><input type="checkbox"/> Courier <input type="checkbox"/> Client Drop Off<br>Other |               |
| LIMS Project ID                 |      | Project Manager Phone #<br><br>(901) 791-2432 | Project Manager Email<br><br>lhall@tiogaenv.com   |            |           |                | Site/Facility ID #  |               |
| Date                            | Time | Sample ID                                     | Matrix  | Grab/ Comp | # of Cont | Container Type | Preservation  | Analyses      |
| 08/31/17                        | 0612 | 32-1  | Aqueous   | G          | 1         | Plastic - Pint | NONE  | Total Lead/DW |
| 08/31/17                        | 0614 | 32-2  | Aqueous   | G          | 1         | Plastic - Pint | NONE  | Total Lead/DW |
| 08/31/17                        | 0616 | 32-3  | Aqueous   | G          | 1         | Plastic - Pint | NONE  | Total Lead/DW |
| 08/31/17                        | 0618 | 32-4  | Aqueous   | G          | 1         | Plastic - Pint | NONE  | Total Lead/DW |
| 08/31/17                        | 0619 | 32-5  | Aqueous   | G          | 1         | Plastic - Pint | NONE  | Total Lead/DW |
| 08/31/17                        | 0620 | 32-6  | Aqueous   | G          | 1         | Plastic - Pint | NONE  | Total Lead/DW |
| 08/31/17                        | 0622 | 32-7  | Aqueous   | G          | 1         | Plastic - Pint | NONE  | Total Lead/DW |

| For Laboratory Use Only |                         |              | Sampled by (Name - Print)    | Client Remarks/Comments |      |                          |       |      |
|-------------------------|-------------------------|--------------|------------------------------|-------------------------|------|--------------------------|-------|------|
| Ice<br>Y/N              | Custody<br>Seals<br>Y/N | Lab Comments | Relinquished by: (SIGNATURE) | Date                    | Time | Received by: (SIGNATURE) | Date  | Time |
|                         |                         |              | <i>Felipe Valquez</i>        |                         |      |                          |       |      |
|                         |                         |              | <i>Felipe Valquez</i>        | 08/31                   | 1006 | <i>L. Hall</i>           | 08/31 | 1006 |
|                         |                         |              | <i>L. Hall</i>               | 08/31                   | 1100 | <i>J. Smith</i>          | 08/31 | 1100 |
|                         |                         |              | <i>J. Smith</i>              |                         |      |                          |       |      |